

ATOMIC ENERGY *newsletter*[®]

A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

Nuclear-Electronics Corp., manufacturer of nuclear instruments, test and measuring, and communications equipment, has begun operations in its newly-expanded plant area. The Philadelphia firm had acquired an additional 8000 square feet for this expansion, and is now in production in this new area..... An Aerojet-General nuclear reactor, which uses enriched uranium-235 in the form of a powder dispersed in polyethylene, will be on display and in operation at the International Atomic Exposition (Philadelphia, Mar. 11-15, 1957). These reactors, now being produced by Aerojet-General Nucleonics, have a normal output of 100 milliwatts, with a peak of 3 watts. (Other PRODUCTS, PROCESSES, INSTRUMENT news, p. 3 this LETTER.)

Base on Christmas Island, in the Pacific, is being prepared for Great Britain's thermonuclear weapons tests to be held between Mar. 1 and Aug. 1, 1957. The U-shaped atoll, which is some 50-miles from tip-to-tip, has been improved with a bomber runway, an auxiliary airstrip, and usable roads. Meanwhile, Britain has notified Japan of a danger zone which has been established around this island. Although the British note said all precautions would be taken to prevent damage to life and property during the tests, Japanese fishing interests have protested that radioactive fallout may drift to Fiji Island waters where Japanese tuna fleets ordinarily assemble. (Other NEWS FROM ABROAD, p. 4 this LETTER.)

Research contract held by Airborne Instruments Laboratory from USAEC has now been renewed for an additional year. Under the contract renewal Airborne Instruments receives \$50,000 to continue its work for one year on automatic scanning of nuclear emulsions. (Other CONTRACT news, p. 3 this LETTER.)

A higher grade for the uranium ore than had previously been revealed at Consolidated Denison Mines has now been officially estimated, under recent relaxation of restrictions formerly on such data (this LETTER 12/25/56, p. 1). Ore deposits of Consolidated Denison are officially estimated at 136,787,400 tons, grading 2.78-lbs. (0.139%) uranium oxide per ton. Previous figures had placed the grade at a little better than 2.0-lbs. per ton, with tonnage estimates also below this official figure. (Other RAW MATERIALS news, p. 4 this LETTER.)

In an expansion of its offerings in the field of nuclear energy, Polytechnic Institute of Brooklyn is now to give a graduate course on the metallurgy of nuclear power reactor materials, with first classes scheduled for this Spring semester. Course will be given by Henry A. Hausner, general manager, nuclear engineering division, Penn-Texas Corp., and Marcel A. Cordovi, head of the materials and testing department, atomic energy division, Babcock & Wilcox Co. (Other COURSES, MEETINGS, CONFERENCES, p. 4 this LETTER.)

X-Ray and Radium Industries Ltd., Toronto, Canada, radiation equipment and radiological firm, has now been appointed Canadian distributor of x-ray equipment and supplies manufactured by Westinghouse Electric Corp. (Other BUSINESS NEWS, p. 2 this LETTER.)

ATOMIC ENERGY BUSINESS NEWS...

RECORD USAEC BUDGET FOR FISCAL YEAR 1958 ASKED BY PRESIDENT: President Eisenhower asked Congress last week to appropriate \$2.4 billion for the USAEC for fiscal year 1958 (June 30, 1957--July 1, 1958). In his message sent to Congress explaining this request, the President said that in fiscal 1958 the U.S. will continue to increase the number and variety of nuclear weapons until an agreement for limitation of armaments and an effective inspection system are set up. Emphasis now is on developing and producing nuclear weapons for tactical purposes; and weapons with reduced radioactive fall-out. He said the program to develop military propulsion reactors will be continued, as well as reactors to produce economic electric power.

The budget provides for the USAEC to explore new power reactor concepts, and to fabricate and operate reactor experiments. The President noted that increased support would be given private industry and public power bodies in power reactor development. No funds for construction by Government agencies of new large scale reactors are provided, he said. However, if acceptable proposals for non-Federal construction of promising reactor types do not materialize from private sources within a reasonable time, a request to Congress for direct construction by the Government will be made, the President warned. He observed that legislation will be introduced to supplement insurance now available commercially against liability arising from nuclear accidents.

Efforts to develop thermonuclear power reactors will be increased, and there will also be increased research on reactor safety, radioactive waste disposal, and biological effects of radiation. Support of research in nuclear physics will be strengthened, with increases in equipment grants and in teacher training to improve education in nuclear technology. The U. S. will assist nuclear programs abroad, through the Mutual Security program. Funds are also provided, in this budget, for a second world conference on atomic energy, to be held in 1958. The President noted that the Export-Import Bank will consider applications for loans from nations desiring to buy power reactors from U. S. producers.

FIRST PUBLIC HEARINGS HELD ON NUCLEAR POWER PROJECT:- Witnesses last fortnight testified for Power Reactor Development Co. at Washington hearings called at request of three labor unions who have complained that the USAEC was guilty of an illegal act in issuing construction permit for PRDC. (PRDC, jointly owned by 21 utility and industrial firms, proposes to build a \$43.2 million, 100,000 electrical kw fast-breeder power reactor at Monroe, Mich. Six months ago a USAEC advisory committee on reactor safeguards questioned the safety of the project, on the basis of then-existing data.) Last fortnight's hearings heard Ernest Acker, president, Central Hudson Gas & Electric Corp., associated with PRDC, explain the financial soundness of the company. Hans Bethe, of Cornell University physics department, and consultant to Atomic Power Development Associates (affiliated with PRDC) said that the fast breeder reactor (the type PRDC is using) is in many respects a safer type than the ordinary thermal reactor. Concurring with Dr. Bethe's views were Norman Hilberry, Argonne National Laboratory; Kenneth Davis, chief of the USAEC's reactor division; and Walter McCarthy and Alfred Amorosi, of APDA. (Next testimony will be by the three labor unions involved: United Auto Workers, International Union of Electrical, Radio and Machine Workers, and International Union of United Paperworkers of America.)

NUCLEAR INSURANCE UNIT FORMED:- Nuclear Insurance Rating Bureau has been formed by 300 fire and casualty companies to put into operation plans previously formulated for pooled coverage of property loss in the nuclear field. Sponsors include both stock and mutual companies, with combined capacity to insure a nuclear risk for \$50 million. W. H. Berry is chairman of the executive committee, H. L. Wayne general manager, and J. G. Bill assistant general manager and counsel. Property that will be covered includes nuclear power plants and other reactor installations; nuclear fuel element plants; nuclear fuel as such; and other facilities involving substantial quantities of radiation.

NEW INVITATION EXTENDED BY USAEC FOR PRIVATE NUCLEAR POWER PROJECTS:- For the third time, private business has been invited by the USAEC to submit proposals to develop, design, construct and operate private nuclear power plants. Although no deadline was set for submission of such proposals, reactors built under this third proposal must be started by June 30, 1962. (This actually means that companies will have to commit themselves before the end of 1957.)

ATOMIC ENERGY FINANCIAL NEWS...

NEW WORKING CAPITAL BEING RAISED BY NUCLEAR FIRM:- Tracerlab, Inc., Boston nuclear products firm, has completed plans to raise \$880,000 in new working capital. Monies will be from a \$400,000 second mortgage on the company's new building (placed with Massachusetts Business Development Corp.), and through sale of common stock. (43,673 shares to be sold to American Research & Development Corp. at \$5.50 per share, of a total of 87,273 shares to be sold, with balance to "other parties"). New funds will assist in the complete reorganization of its Keleket x-ray division (which has been underway for some time), and the firm expects that this division's 1956 loss operations will become profitable in 1957.

URANIUM FIRM FILES WITH SEC FOR ISSUE:- Stanrock Uranium Mines, Ltd., Toronto, Canada, has registered \$26 million of first mortgage sinking fund bonds, due June 1, 1963, and an unspecified number of shares of its \$1 par common stock, with the Securities and Exchange Commission. The securities will be issued in units of \$1,000 of debentures and an unspecified number of common shares. Blyth & Co., Inc., and Dominion Securities Corp. are principal underwriters. Proceeds will be to repay borrowings incurred in its construction program, to finance additional expansion, and for working capital.

CHANGES IN STOCKHOLDINGS SHOWN:- Changes made last month in stockholdings of officers of companies in the nuclear field include sale by Paul Westerfield, director, Northspan Uranium Mines, Ltd., of 800 common shares reducing his direct holdings to 500. His proportional ownership through Kinloch Mines, Ltd., amounts to 56,000 shares. (Rio Tinto Mining Co. of Canada, Ltd., holds directly 2,015,962 shares; through a wholly-owned subsidiary 93,937 shares; and through majority and minority owned subsidiaries 373,498 shares.)

BIDS ASKED, CONTRACTS AWARDED...in the nuclear field...

BIDS ASKED:- Bids are now being asked for construction of the expended core facility (for the Naval reactor facility) at the national reactor testing station, Idaho Falls, Idaho. The work, under contract 73-(14-150) is expected to cost \$2.5 million; a bidding period of five weeks will be allowed. Inquiries should be made to Westinghouse Elec. Corp., P. O. Box 376, Idaho Falls, Idaho.

CONTRACTS AWARDED:- Contract has been awarded by the Government of Greece to AMF Atomics, Inc., New York, to design and build nuclear research reactor for a new Greek national nuclear research facility, to be operated by the University of Athens. The reactor which AMF will build will be of the pool type with a power potential of one megawatt. Fuel will be supplied by the U.S. under terms of a bilateral agreement between the U. S. and Greece. (Award of this Greek contract brings to nine the number of reactors AMF has been retained to design and build.)

NEW PRODUCTS, PROCESSES & INSTRUMENTS...for nuclear lab & plant.

NEW PRODUCTS FROM MANUFACTURERS:- Small, light nuclear power packs, trade-named Raypak, with shelf and use life said to be over 25 years, are offered as power sources for programming devices, timers, fuses, destructors, warheads, etc. Capable of delivering energy pulses up to 337,000-ergs, sizes range from less than one cubic inch to two cubic inches. Heart of the power pack is a nuclear battery, in production by this manufacturer for last few years. Converting nuclear energy directly into electrical energy, this battery is made with current ratings from 5-to 5000-micromicroamperes, and equilibrium voltages on the order of 10,000-volts. --Patterson-Moos Div., Universal Winding Co., Jamaica, 18, N.Y.

Low background counter, model CE-14, is said to be first complete one package instrumentation (counters, shields, scalers, gas flow system etc.) to offer background reduction to less than one count per minute, and to have an ultimate sensitivity of 0.05 counts per minute. The unit uses two separate counters operating under an anticoincidence umbrella of 16 Geiger tubes, the whole shielded against terrestrial gamma radiation by mild steel bricks. --Tracerlab, Inc., Boston 10, Mass.

NOTES:- New catalog of Volk Radiochemical Co., 5412 Clark St., Chicago 40, Ill., lists over 300 different labeled compounds the firm offers, as well as its specialized detectors, personnel protection equipment, and health physics service.

RAW MATERIALS...prospecting, mining, marketing...

UNITED STATES:- Disappointingly-small tonnages of uranium ore have been tendered to the USAEC's uranium ore-buying and sampling plant near Globe, Arizona, and as a result the station will be closed June 30, 1957. Reserves developed in the district had been much smaller than expected; ores are low grade and refractory to existing processes.

Western Gold & Uranium, Inc., has completed its silver mill and started initial processing of uranium-silver ore at its Silver Reef property near Leeds, Utah, with first 15-ton shipment of silver concentrates made last fortnight. Property is said to be only one in U. S. with ore yielding both silver and uranium of commercial grade. Silver Reef uranium bearing ore, after extraction of silver, will go to Vitro Uranium Co. mill at Salt Lake City.

CANADA:- Work is now underway at Can-Met Explorations' mill in the Blind River section of northern Ontario, with projected date July 1st for first treatment of ores at the property. Mill is expected to handle 2,500-tons per day, output of which will go to Eldorado Mining & Refining Ltd. (Can-Met holds contract for purchase by Eldorado of \$75,852,000 worth of uranium precipitates).

Increase in commitment has now been made by Eldorado Mining & Refining under which some \$21 million in uranium concentrates will be bought from Rexspar Uranium; originally Eldorado had given Rexspar letter of intent for its purchase of \$15 in concentrates. Trade sources have been apprised of this increase by the firm's president, Philip Joseph; the company expects a formal contract shortly. First deliveries under the contract will start Sept. 30, 1957 and extend to Sept. 30, 1963.

MEETINGS, COURSES, CONFERENCES...on nuclear subjects...

COURSES:- Design of blast resistant structures will be covered in course to be offered for the first time next semester at Illinois Institute of Technology, Chicago. Course will be taught by Raymond W. Sauer, specialist in the effects of nuclear explosions.

Series of six thyroid uptake seminars will be conducted during 1957 by Oak Ridge Institute of Nuclear Studies to provide instruction in standard method of calibrating uptake of radioiodine by the thyroid. Seminars will be devoted to lectures, demonstrations, laboratory work. Details of fees, course dates, etc., may be obtained from William Busby, ORINS Medical Div., P.O. Box 117, Oak Ridge, Tenn.

CONFERENCES:- Two day conference Apr. 16-17, of Cleveland Section of American Inst. of Mining, Metallurgical & Petroleum Eng., will consider materials attractive for use at 1500 deg. F. in nuclear reactors, aircraft, and missiles. Papers will take up present status of development, basis of strength, problems and shortcomings and the future of each class of materials. Further details are available from AIME, 29 W. 39th St., New York 18.

SPECIAL STUDIES:- Council for Atomic Age studies has been created at Columbia University, New York, with objective of making Columbia a center for the study of problems facing society as a result of the development of nuclear energy. Areas of study which may be covered include physics, engineering, medicine, journalism, business, philosophy, law, and international relations. Council will stimulate, organize and supervise studies in these fields.

SYMPOSIUM:- A symposium being held this week (Jan. 24-28, 1957) at the University of Puerto Rico, sponsored by Oak Ridge Institute of Nuclear Studies, and the USAEC, is for the purpose of emphasizing the potentialities of the University in nuclear energy education. Speakers will be from the USAEC, the Institute, and the University, with some 1200 persons expected to attend.

ATOMIC ENERGY ABROAD...

GREAT BRITAIN:- Nuclear Energy Trade Associations' Conference is a new organization to enhance cooperation between trade organizations which represent companies in nuclear work. Founder members of NETAC are British Engineers' Association; Scientific Instrument Manufacturers' Association; Water-Tube Boilermakers' Association; British Chemical Plant Manufacturers' Association; and British Electrical and Allied Manufacturers' Association. Headquarters of NETAC are at the British Engineers' Association, 32 Victoria St., London S. W. 1.

FRANCE:- Uranium mill for treatment of ores is planned for Bessines, in the Haut Loire, to handle uranium minerals which occur there. Recent geological tests have shown uranium content to be satisfactory for extensive working.

ATOMIC ENERGY PATENT DIGEST...latest grants...

Process of recovering and purifying uranium from deposits formed on the parts of a calutron. U. S. Pat. No. 2,776,184 issued Jan. 1, 1957; assigned to United States of America (USAEC). (Application date: Apr. 21, 1944.) (Inventor: Martin D. Kamen.)

Recovery and purification of nitric acid contaminated with small traces of chlorides. U. S. Pat. No. 2,776,189 issued Jan. 1, 1957; assigned to United States of America (USAEC). (Application date: Dec. 3, 1954.) (Inventor: Francis W. Winn.)

Corrosion inhibitors for deuterium exchange process. U. S. Pat. No. 2,776,263 issued Jan. 1, 1957; assigned to United States of America (USAEC). (Application date: Apr. 16, 1954.) (Inventors: Clarence F. Hiskey, Dwayne T. Vier.)

Method of coupling coaxial tubes. U. S. Pat. No. 2,776,368 issued Jan. 1, 1957; assigned to United States of America (USAEC). (Application date: Sept. 28, 1955.) (Inventors: Harvey M. Owren, Vernon L. Smith.)

In-vivo radiation scanner. U. S. Pat. No. 2,776,377 issued Jan. 1, 1957; assigned to United States of America (USAEC). (Application date: Apr. 22, 1954.) (Inventor: H. O. Anger.)

IONIZING RADIATION & RADIOISOTOPES...

NON-DESTRUCTIVE TESTING APPLICATION:- Purchase of a 1 MEV Van De Graaff machine by Arnold Greene & Co., Inc., Cambridge testing and inspection firm, gives that company new facility for its recently completed x-ray laboratory. Machine, bought from High Voltage Engineering, permits industrial radiography of thick metal specimens.

NEW IRRADIATION FACILITY:- A new gamma irradiation facility at Oak Ridge National Laboratory puts to good use the radiation energy from cobalt-60 slugs awaiting shipment to customers; under normal storage procedure this radiation would be wasted. The unit consists of a series of subterranean storage tubes, holding cobalt-60 slugs, and surrounding a square plug. A compartment at the base of this plug holds the samples to be irradiated. The radiation field available from 85,000 curies of cobalt-60 now stored in the unit has been measured at 1,100,000 roentgens per hour. Since the amount of cobalt-60 in storage will vary between 85,000 and 300,000 curies, the gamma field will be recalibrated as the loading changes. For further information on the facility, write Radioisotope Sales Dept., Oak Ridge Nat. Lab., Oak Ridge, Tenn.

GOOD RADIATION RECORD FOR NUCLEAR SUBMARINE CREW-MEMBERS:- Radiation check of the 106-man crew of the submarine Nautilus, first U. S. nuclear powered submarine, has shown that for its first year of operation the average radiation received by crew men was 173 milliroentgens (for the year), which is less than the current maximum one week levels of the National Committee for Radiation Protection. Individual dosage received ranged from "none measurable" to a maximum of 1,438 milliroentgens, for the year. Figures are by Dr. John H. Ebersole, the submarine's first medical officer.

RESEARCH & TRAINING ACTIVITIES...in the nuclear field...

NEW RESEARCH FACILITIES:- Knolls Atomic Power Laboratory, Schenectady, is completing this month new facilities costing more than \$1 million for nuclear research. New two-story building will house two nuclear reactors for experimental purposes and an IBM digital computer (704) for mathematical analysis. Work at KAPL is headed by W. R. Kanne, manager of advanced development activity there. (KAPL, operated under prime USAEC contract by General Electric Co., has staff now working, among other projects, on design of submarine advanced reactor, prototype of the reactor KAPL will subsequently build to power world's largest submarine, the Triton. Hull of Triton is underway at Electric Boat's Groton, Conn., yards.)

URANIUM METAL LOANED FOR TRAINING PURPOSES:- Three loans, each of 5,500-lbs. of natural uranium metal, plus neutron sources, are to be made by the USAEC to North Carolina State College, Raleigh; Ohio State University, Columbus; and Rensselaer Polytechnic Institute, Troy. Materials will be used in sub-critical assemblies for training purposes.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER

